



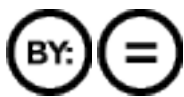
TAMPEREEN TEKNILLINEN YLIOPISTO

## **Futures studies essay**

Future of Urbanization from Sustainable Development Viewpoint

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# Abstract

TAMPERE UNIVERSITY OF TECHNOLOGY

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Over fifty per cent of all the population lives in urban areas and the trend is strengthening. At the same time the different elements of sustainability, that is, economic, ecological and social are suffering. Speed of climate change has accelerated and versatile countries are struggling to become more invulnerable in an increasingly complex environment with varying success. Need for continuous improvement is inevitable but the traditional means seem not to suffice any longer.

As a means to overcome the generally known difficulties related to urbanization and sustainability, this essay portrays different kinds of pain points with some corrective actions based on existing research. The conclusions of the report include the importance of focusing into the requirement of more human centric urban planning, green technology and reinventing the economy disconnecting it from the myth of continuous growth.

This futures studies essay is a part of the implementation of the FUTURES4 Summer School at Finland Futures Academy in summer 2011. Sincere thanks to Professor Nijkamp for his inspiring interview at Tampere as an important seed for this work the results of which are always unknown beforehand.

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# 1 Introduction

The trend of urbanization is well-known globally and persistent population growth only strengthens the phenomenon. Tremendous global challenges, especially climate change, forces the mankind to turn it's operation into more sustainable. Urbanization seems to have some support to this request, but a holistic understanding of the situation is still vague.

The purpose of this essay is to give an overall understanding of how present research results see the future of urbanization especially by the sustainability perspective.

The essay is structured as follows: In section two the current trend of urbanization is illustrated. Then relevant issues related to urban planning as a part of urban development are described. In chapter four, the reader is given the basic information of sustainability with some urbanization related special remarks. Next, some closer review into Finnish urbanization development is given as a miniature example. In section six the most important global topics relating urbanization are taken into closer inspection. Finally, the generic conclusions are presented based on previous findings.

## 2 Trend of urbanization

Already in the history cities have been created in natural market places like near a sea, which provided rich trade possibilities. Active trade in turn enabled a city to develop in many various ways attracting newcomers finding for better living conditions compared to rural possibilities. In 2007 the number of people living in urban environment exceeded fifty (50) per cent of the global population first time in the history (Nijkamp, 2011; United Nations, 2009). An increasing trend seems to continue in the future because also today same basic needs to find work, education and new choices for free time exist. In addition, continuously growing global population drive existing and totally new cities to grow and rural areas to become emptier.

In the history cities have been much smaller because of natural limitations of logistics for food, raw materials and other products. Current understanding keeps at least a city size of 25 million people as possible mainly because of developed logistics capability but that restriction might be highly exaggerated. (Nijkamp, 2011) Three world's biggest cities are located in Asia including

Shanghai, Mumbai and Beijing (One World Nations Online, 2011) Shanghai as the biggest one with somewhat 14 million permanent citizens by the end of 2008 (Shanghai, 2011).

Generation and development of a city can occur in various ways. A small town can attract new activities and people, the gradual result of which is a big city. The other usual way is to combine several neighboring population centers into one bigger city, London as an example, which is often based on an idea of an existing common work place area. In China the land use and city development are highly based on government planning, the ultimate implementation of which is the practice to build a new city or bigger city expansion out of the blue (Lahdenperä, 2010; Nijkamp, 2011).

Though both slums and spontaneous living areas are built with light and cheap materials and are populated by the poorest people, their development path is very different. Spontaneous living areas, which are located especially in Latin America (e.g. Lima) and some other developing countries, are new suburban areas built on barrens not originally planned for living. Typically during a night occurring invasion into a non-planned town area is well organized by thousands of moving families, which build up four walls and a roof indicating the ownership of the marked land. As a consequence, the controlled process development of a spontaneous living area makes it possible in favorable circumstances to change it into a normal middle-class suburban within 20 years, while slums deteriorate with time from the original state. (Seppänen, 2007)

In addition to individual needs and choices societies have additional reasons for supporting urbanization trend. For example, China has taken urbanization as a competitive advantage with help of which both economic, social and ecological efficiency can be improved. Transferring one per cent of the whole Chinese population into urban citizens has been estimated to increase gross domestic product (GDP) with two (2) per cent. (Paltemaa, 2010). It has also been estimated elsewhere that doubling a city size of 100.000 people will provide increase of 15-20 per cent economic efficiency (Nijkamp, 2011).

According to Professor Nijkamp urban construction when carefully planned can also be kept as a most clever construction, which offers new choices in a sustainable way, which is not possible in rural areas. Urban environment includes also challenges like pollution, social stress and criminality but the weight of them should be put into proportion with the population size, which might even out the situation. (Nijkamp, 2011). However, urban poverty has an increasing trend

the strength of which varies vastly regionally. In Latin America the situation is the worst and in East Asia (especially in China) the least. The main reason for differences is based on the fact that in Latin America majority of poor people live in cities while in East Asia only ten per cent, but global trend seems to strengthen there also. (Ravallion et al., 2007)

### **3 Urban planning**

According to current understanding social and cultural environment has an active role towards humans by providing opportunities and restrictions. A human observes and creates meanings besides operation in close interaction with the environment. (Kytä & Kahila, 2006). Christopher Alexander<sup>1</sup> in his battle for returning city environment back to citizens has been supported by numerous successors. For example, Professor Nyman has claimed that environment should support and nurture human growth and different planning conventions should be estimated by human experienced quality and identity perspective. The ultimate goal for urban planning should be the good quality of human life (Nyman, 2008). Urban planning has been concentrated far too much into visual and esthetical issues instead of bringing human meaning into main focus to underline that a city happens (Lehtovuori, 2010).

While competing for global investments decision-makers in many vastly growing cities, for example in China, have concentrated mainly into improving their infrastructure and business environment. Attracting new companies into area has been the most important value in urban planning while improving the life conditions of normal citizens has been neglected. However, efficient work transportation, local basic services, high level education possibilities, healthy and convenient living surroundings make a significant difference by quality of life viewpoint and at the same time help successful cities gain new competent inhabitants and other activities. (Luova, 2010)

One of the essential goals of urban planning is to provide flexible public transportation services in an efficient way attracting citizens to utilize the solution in their everyday life as far as reasonable. The wider the connected urban environment and the more people involved, the more important it is to perform careful public transportation planning based on all the sustainability

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<sup>1</sup> See more details in reference (Alexander, 1979)

angles: social, economic and environmental. Construction of various transportation means is efficient including light traffic solutions like bicycle and walking. In a Finnish study it was shown that versatile land-use and high quality street network combined with environmental density increases walking and use of bicycle but more research is required for a holistic understanding of different kinds of urban planning effects on transportation (Kyttä & Kahila, 2006).

Developing technology also brings new interesting solutions for implementing and developing existing transportation network to better meet the increasing expectations of citizens. Based on history halfway solutions do not attract well enough the citizens to change their own car for a public transportation. Therefore the solution has to be lucrative as a whole to succeed in the competition of users. For example, a public bus is no more that popular solution because people want to travel in a comfortable and effective way without a feel of wasting time (Nijkamp).

Cities enable cost effective, ecological public transport solutions, which are not possible in rural areas. In a research rail traffic is estimated to have 25 per cent lower carbon footprint compared to bus or taxi traveling (Heinonen & Junnila, 2010) which is only a partial explanation why development of especially different kinds of railroad solutions have increased their popularity during the past 10 years in Europe as public transportation solution including local train, metro and light rail transit (LRT). New light rail transit lines have been built in middle-size cities especially in Great Britain, Germany and France with successful results. In USA regional traffic is taken care of by streetcars (trams) or preferably light rail transits the number of which has increased since 1980s. Number of old operational tram lines in Asia are quite extensive. In recent years interest in the tram type of systems has increased globally. (Wikipedia, 2011)

It is still important to keep in mind that a city is not just a place for sleeping and work but it should support all level human needs defined in well-known Maslow hierarchy<sup>2</sup> (physiological, safety, love/belonging, esteem and self-actualization). An illusion that city planning can plan everything ready for people who just fit in is also kind of misunderstanding. So far, top down approach has been shown unworkable in various circumstances, for example product interfaces and management in general, and the same applies with urban environment. Urban planning is

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<sup>2</sup> For more information see for example:

[http://en.wikipedia.org/wiki/Maslow%27s\\_hierarchy\\_of\\_needs](http://en.wikipedia.org/wiki/Maslow%27s_hierarchy_of_needs)

recommendable to hearken what the living experts of their environment desire including normal inhabitants and this has already started to change city planning in many countries with alternating results. It is not enough just to listen what citizens have in their mind, real hearing requires that considered opinions also are taken seriously and finally affect the decision-making, which has not been the case in general. Performed cosmetic listening is required to turn into purposeful action in order to have some significance. After all, the quality of environment is about compatibility between individual needs and the everyday environment affecting holistic human welfare (Kyttä & Kahila, 2006).

Earlier studies have shown that indoor density affects human stress, social capability and learning negatively. Evaluating outdoor density is complicated because many factors including social, physical, cultural and individual characteristics have an influence on experienced quality. It has been found that density intensifies existing environmental experiences in both good and bad. Finally, individual preferences determine how well environmental density supports one's alternating collective and privacy needs either by restricting or supporting everyday living. In addition, different combinations of indoor and outdoor densities have an effect on experienced environmental quality and few made studies show some negative connection between combined high indoor and outdoor density and experienced environmental stress. (Kyttä & Kahila, 2006)

Urban infill continues to be a political target in USA and many European countries with varying interest in improving environmental quality while building new constructions into existing cities. As a consequence to urban infill a part of citizens have searched for looser living in natural suburban and neighbor areas while a part of citizens have welcomed new possibilities. Based on a Finnish study positively experienced quality aspects should be stressed and negatively experienced minimized for a successful result and this requires careful listening to the citizens. Urban fear phenomenon also restricts human choices increasingly despite of it's rationality. (Kyttä & Kahila, 2006)

## **4 Sustainable development**

Hundreds of definitions for sustainable development exist but none of them has become an imperative as such. Widely referred definition by Brundtland Commission: "the ability to make development sustainable— to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations, 1987) is one of the



successful ones. United Nations' World Summit on Sustainable Development in Johannesburg introduced the "three pillars of sustainable development" - economic, social, and environmental (United Nations, 2002) which are generally accepted as corner stones for holistic sustainability.

Later on Weterings et al. describe sustainability as economical development, which respects ecological and human values. Central themes are the sufficiency of energy production, climate change mitigation, technology transfer and development, adequate water supply and education. The mixture of emphasis varies considerably between different countries including for example national security, the reduction of poverty and social equity. Some countries in turn concentrate into clarifying the justification and history background related to the development. Climate change will bring new possibilities like utilizing the richness of Siberia ground and the Arctic Ocean while at the same time some areas suffer already from severe drought, floods and health problems. (Weterings et al., 2011)

Professor Aspinall claims that environmental evaluation has come to last. Better understanding of producing and evaluating ecosystem services is required because plain knowledge of space, resources and flows is not enough. It is important to recognize that ecosystem services provide human welfare and economical success. Professor Bateman (UEA, University of East Anglia) has stated: " Without nature we all are dead, so the total value of environment is indefinite." By transferring the environmental values into money it is often easier to improve the awareness of the importance of ecosystem services. For example, a longer staying close to a green area can be evaluated to cause positive health effects of 300 English pounds per person. It is also good to remember the direct connection between food production and consumption to ensure the future. (Aspinall, 2011)

The weakest link in urbanization seems to be a human being unless sufficient corrective actions balance the situation. Research results show that longer staying in urban environment causes significantly increased hypertension, obesity and cardio-metabolic risk mainly caused both by western-type of diet consisting of excessive fat and sugar and lifestyle with inadequate physical exercise (Sodjinou et al., 2008). Elsewhere it has been discovered that urban environment has a close relationship to the incidence of eating disorders, namely, the risk of getting bulimia nervosa is five times higher in urban areas than in rural environment while anorexia nervosa seems not to have the same kind of environmental connection (Son et al, 2006). Various research studies have shown some proof that psychosis and depression in women and men have increased in urban

areas both in developed and low-income areas (Sundqvist, Frank, & Sundqvist, 2004; Lundberg et al, 2009). While urbanization development continues the problems will only increase unless some improvement to the trend is found out.

However, more and more information on positive urban environment effects on an individual is shown. Some evidences illustrate that urban environment when successfully implemented can also provide positive stress lightening experiences and increase the emergence of new and surprising emotional responses. Some early results indicate that quite high density, 100 inhabitants per square meter as optimal, is required for a qualified urban environment. In addition, the beauty of the surroundings seems to play an important role as the source of environmental quality. Further studies are required to better understand the phenomenon more deeply in order to clarify profoundly the key elements of producing especially refreshing experiences. (Kytta, 2009)

Ever increasing consumption, the main part of which relates to transportation, heating and cooling, is another very problematic aspect in sustainable development at the same time bringing pleasure and benefits including versatile ethical and moral viewpoints. The basic question setting relates to the possible individual choices to consume less or dissimilar compared to today. The two main consumer models treat a consumer either as a rational or an expressive individual. The main problem relates to the fact that typically decision-makers select the rational consumer explanation because it is the way by which authorities are able to move the responsibility to the citizens without needing to do something more demanding to improve the situation. As the result of the previous indolence a plenty of problems emerge in real life circumstances because human action is highly guided by routines (the illusion of personal selection), social networks (the norms of acceptability), inadequate consideration and related action against own values (automatic, quick response). (Warde, 2011)

Finnish research results show that infrastructure has a significant effect on about two thirds of consumer based carbon footprint related to residential energy, building (location and density) and transportation. In addition to society made selections, new clean technology innovations enable remarkable improvements in total carbon footprint. Non-work related (free time, shopping) private car traffic forms 60-75 per cent of the total amount in studied urban areas (Helsinki, Porvoo), which is an important datum for urban planning when aiming at the decrease of total carbon footprint caused by transportation. The biggest potential in reaching a low carbon society

status relates to green energy production technology while in urban planning residential density plays the most important role by decreasing total transportation needs and enables more flexible public transportation. As a consequence to previous, a single consumer has only restricted possibilities to affect own carbon footprint when doing own individual selections within the society framework. (Heinonen & Junnila, 2010)

In addition to the development of green transportation technology, the increase of virtual services has an important impact as a solution to minimize physical transportation volume. It has been estimated that in USA energy saved by potential remote work could exceed the total amount of current renewable energy production (Lister & Harnish, 2011). By providing wide virtual networks more people are enabled to work also at home or shared local virtual offices at least partially decreasing significantly the daily traffic amount. For some reason remote work has not largely become that popular during the past years, though in the beginning expectations were much higher. However, trend is changing and more and more of work is done at home, on the road and at whatever preferred place. The change of work culture requires always plenty of time to become widely accepted and new virtual and social media technologies have strengthened the trend strongly in the past few years. Also the awareness of carbon footprint pressure affects individual and workplace decision-making more and more. A part of companies have taken sustainability as one of their competitive weapons to attract demanding professionals and customers for mutual benefits. Though at first made investments into green solutions and more sustainable operation might increase total costs, in the longer run profits are remarkable including cost savings, improved work satisfaction and image affecting the total company output.

It is the responsibility of society to support the sustainable behavior of individuals by providing high quality environmental planning to offer positive choices and hints decreasing unwanted consequences. The changing of human behavior is difficult thus versatile means, patience and environmental support are required. For example different kinds of environmental hints (avoid obesity) with practical solutions (the size of a plate) would be useful in helping to change a habit. In addition, the increased criticism of consumption and capitalistic requirement for increasing growth as a prerequisite for welfare, strengthens the awareness of individual selections. The strength of examples, education, publication of research results and other information all power a consumer to perform better selections in their normal life. Taxation should be changed to minimize harmful luxury consumption for more ecological to avoid rebound effect. (Warde,

2011) However, selecting services compared to product consumption is estimated to have only about 15 per cent lower carbon footprint on the average based on the fact that also producing services requires varying amount of energy, raw materials or purchase of durable consumables (Heinonen & Junnila, 2010).

## **5 Finnish urban development**

Finland as a small nation with some over 5 million sparsely inhabited residents has been obeyed the global urbanization trend during the past decades but recently some weak signals against it have emerged. Established politics is highly based on building and strengthening of biggest growth centers (Helsinki, Tampere, Turku, Oulu, Jyväskylä, Kuopio) with good education, transportation and service infrastructure to provide competitive advantage. The population is distributed very inconsistently and about 85 per cent of Finns (United Nations, 2009) are living in urban environment. In addition, Finnish demography indicates one of the most aging nations in the world.

In a SITRAs study Finnish urbanization trend seems to have changed from the past. The wish of moving back to rural environment was clear but the reality of the will state was left open. In order that trend to strengthen new kinds of work possibilities must be available for rural population. That could mean the utilization of existing and developed virtual networks, logistics, clean transport and virtual services in addition to increased mobile and remote work. (Nieminen-Sundell, 2011)

In general Finns have very common preferences for a pleasant living environment despite of place, education, age or profession. The most desired attributes include location near to nature, peacefulness and low-rise housing. (Kortteinen et.al., 2005) Especially people living out of capital area appreciate loose housing as comfort and welfare sources (Heinonen & Junnila, 2010). Previous preferences seem to represent still the main stream but more and more real urban citizens exist who enjoy and participate the potential of services and prefer that kind of life style at least in certain life situation. Slight increase of urban life style appreciation has been shown and 58 per cent of the inhabitants of bigger urban centers have stated to live already in their preferred house type (Tuominen et al., 2005). In practice, many Finns have to live in urban areas because most of the work places are situated there. Partially as an escape to a non-satisfying environment part of Finns travel a lot during their free time both in homeland and foreign

countries. In addition, around five hundred thousands of summer cottages all over Finland, numerous allotments and vegetable garden plots emphasize the wish to be more near to the nature.

The segregation of different city areas has increased in Helsinki capital area during the past over ten years. The described phenomenon is already well known in bigger cities globally. Research studies based on strong quantitative data indicate unquestionable trend that unemployed people seek together, which seems to cause hard to be treated poverty. Increased feel of insecurity is at least partially explained by this trend especially in the areas with high proportion of male unemployment. Evidences also show that original population has started to leave certain city areas after the proportion of immigrants exceeds certain level, families with children and well-paid at the first front, which strengthens only the total poverty. (Kortteinen & Vaattovaara, 2011)

As a more radical individual decision, increasingly more and more citizens have returned back to rural landscape and found a new way of living out of urban stress and urgent which is possible by made savings and decreased consumption. Rural life style is not that consumption centric compared to city life (even 40% smaller consumption level (Heinonen & Junnila, 2010)) and there are plenty of free of charge ways to spend spare time a part of which even combine joy and benefit. Same service possibilities are not provided in rural areas but people living there do not even demand them because versatile city potential is not the most important issue in their life reflecting own value setting. Modern urban life style is questioned by asking if life is for consumption or living. As a follow-up to selecting rural living, new kind of work is searched for to give the decent standard of living without risking the quality of life. De-growth and slow movements have landed well also into Finland like increasingly in all over western culture following the wisdom of 'less is more' (Jackson, 2011).

In Finland real estates are responsible for the third of total greenhouse gas without noting the actual living effects. Low carbon solutions in housing and reasonable transportation infrastructure based on location and accessibility have major role in decreasing the total greenhouse gas level. (Heinonen & Junnila, 2010) In addition, more popular flexible remote work could be significant in the longer run decreasing both housing and traffic greenhouse gases. According to Ala-Ketola (2011) the 1,3 million kilometers of total work traveling in Finland are saved nowadays within a week with the help of remote work at home.

According to a Finnish study urban environments in the capital region have different kinds of profiles for carbon footprint mainly because of their varying density of housing, the existence of local train connection to Helsinki and accessibility of services. However, different urban area types (city, countryside, smaller town with a lower standard of living) seemed not to have significant differences in total carbon footprint despite of varying profiles. In turn, the greenhouse gas profile of an existing energy production seems to have the most significant role to the footprint of a consumer, for example in Helsinki the estimate is about 25 per cent. In addition, the density of housing has an important impact on the total situation at the same time being the most significant way for a single consumer to affect own footprint, which is otherwise very difficult when living in an apartment house. In general, each urban consumer is estimated to be able to decrease footprint caused by own individual consumption selections with 25-40 per cent with only moderate sacrifices. (Heinonen & Junnila, 2010)

## **6 Global dynamics**

The current total population is about seven billion and by the end of the century population is estimated to be around 9 to 10 billion. Because the global birthrate shows decrease and the average lifespan increases, the total share of elderly people will grow significantly during this century. Currently developed countries like Japan, Germany and Sweden are leading in the trend but in the future same effect will happen also in several undeveloped countries like Mexico and China. (United Nations, 2010) The urbanization trend seems to accelerate phenomenon because raising a child in urban environment is much more expensive than in rural areas and therefore families in cities are smaller. As an exception to the dominating trend, Africa's population development in average delays with vast birthrate and low lifespan and only time will show when the demographic change will happen (Chamie, 2011).

The density of population varies vastly around the globe and current power situation will change significantly because of this during the following decades. Europe with declining population will have much smaller global role compared to today with only five per cent of total population. At the same, the emphasis of production and economy moves into south China as biggest market. (Chamie, 2011; Nijkamp, 2011) Professor Vihavainen (2009) claims that within two generations Europe will be different compared to today and western culture will represent a minority and with longer time only a piece of history because of demography. Immigrants from Africa and Asia

will form the majority and unless real integration occurs, western culture will be lost. However, this is only a natural development because cultures are not built to last over thousand years and many much less. Same phenomenon happens in USA where Spanish speaking becomes more common and white skin will be a minority within following few decades. The modern version of migration of people known in history is ongoing and climate change only strengthens it. (Vihavainen, 2009)

Long lasting over consumption needs to be ended and changed to a more sustainable level. So far GDP has been the mostly used value for judging the satisfaction of people but critics around it intensifies. It has been noticed that at the certain point of GDP happiness of citizens will no more grow or may get worse. Forever growing economy seems not to fulfill the ultimate promise of welfare in the contrary it becomes burden. High income relative to surroundings provides material welfare, status and even power in the society diminishing individual barriers at the same time risking general welfare. The single GDP value of a country may also keep inside major differences in income levels and thus cannot be kept as the representative value of welfare. (Jackson, 2011; Giampietro, 2011)

Aging brings serious risks to welfare and the continuation of current consumption way of living is in danger. Forever growing economy is the generally accepted mantra by politicians for curing the economics. However, global resources are limited, climate change threatens and general welfare seems not to follow the GDP after the threshold is exceeded - new kinds of alternatives should be invented for sustainable development. Simple de-growth as such without further actions might cause severe economical problems, instead more managed economical change should be well prepared for minimizing subsequent challenges. (Jackson, 2011; Vihavainen, 2009)

So far two different kinds of solutions for economy are commonly known. Firstly, relative solution for decoupling means that resource usage is decreased per unit. So, the idea is to produce more with less by increasing effectiveness, which seems not to work well because of rebound effect. The more is produced, the more is consumed, greenhouse gases increase and natural resources decline. Secondly, absolute decoupling means that natural resource usage decreases whatever the production level is. It is the one that seems to be required if we want to keep the planet and the humankind capable of survival. (Jackson, 2011)

Technology development and transition from production to services seem to be only partial answers to this globally challenging reality. More radical changes into human action need to occur and vast population growth does not help the situation, conversely. The deep change of society is required to replace current consumption centric behavior into more sustainable style of living without risking ecological and social prosperity. Green economy seems as an acceptable solution by investing in public transport and green energy building and production at the same time offering plenty of new significant work places for both improved economics and as one of the key human prosperity sources. More equal sharing of work and benefits are required globally. The current trend of minimizing human work by effectiveness viewpoint needs through change. Instead, we should concentrate into the decoupling of material consumption from provided services like many third sector and small scale services implement already now with little income. Fortunately studies show that people who have selected downshifting type of simplistic living in the honor of natural and social equity seem to be the happiest ones. (Jackson, 2011)

However, in order a bigger change to happen wider individual decision is inadequate but society needs to guide the future towards a new kind of economy, which enables and also makes people to prosper and at the same time live sustainably. Equality should be honored to enable balanced welfare of the population all over the world, which is currently not the case. Conflicting messages should be avoided and rather give space to direct speech. Public investments should be thoroughly estimated whether they support sustainable future and generally acceptable values and decrease short term, selfish behavior, which aims only at the increase of consumption. The role of government is essential in finding the necessary way to provide welfare without economical growth. Human needs should be put into center: need to prosper, survive, be safe, participate into society as an accepted individual when fulfilling our potential like Maslow and many others have stated earlier. (Jackson, 2011)

## **7 Conclusions**

The dominant trend of urbanization seems to be accelerating for decades especially in developing countries as a result of the estimated vast population growth. The ability of rural area to nurture new growing generations is limited and especially young people need and often also desire to seek for better life conditions in urban environment. However, quick urbanization phase will not occur without challenges.



In sparsely populated areas in developed cultures in turn, the urbanization trend might slow down and even stop in the future decades with little importance to the total global phenomenon because of its small population share. However, the restructuring of urban environment continues to better support overall sustainability and competitiveness while rural area will invent itself as a new economy which integrates more tightly with urban environment at the same time providing new kind of life style opportunities.

By sustainability point of view it seems to be so that urbanization is a significant solution at least for economic sustainability in enabling more efficient infrastructure and other public services and concentration of work places bringing overall flexibility in operation. However, currently prevailing consumption centric society model needs a new direction away from the illusion of permanent growth as the ultimate solution for welfare. The absolute decoupling seems inevitable, the sooner it is taken for granted the more alternatives are given for the implementation. The governments should take more responsibility for the holistic development path towards the green economy without delays. Wider education about sustainability and various societal impacts of the climate change are required in addition to serious work for turning the economy into a real sustainable direction based on research results. In addition, need for global co-operation without so typical selfish politics is a must.

The balance of ecological sustainability seems to be more divided. Though cities enable comprehensive public transportation thus decreasing work based private motoring, the life style in urban environment is far more based on consumption than in rural areas. Increased free time services may cause over 60 per cent of total individual transportation needs. Free time traveling is more often taken care of by an own car because of inadequate transportation support or plain comfort. After all, green energy production plays the most important role in total consumption and greenhouse gas emissions both in rural and urban areas.

The biggest urban challenge relates to social sustainability and especially to human physical and mental health the latter of which is underlined in the highest level of urban environments. It is the responsibility of society to enable human selection for a healthier future and at the same time overall benefits. One of the key topic is related to flexible public transportation services combined with good possibilities for exercise by supporting high quality light traffic for normal weekday needs to avoid ever increasing physical and mental health risks. Because the size of an urban environment sets the natural limits to the possibilities, somewhat larger urban constructions

are suggested. The other issue is related to the improved urban planning for a healthy environment as such supporting long-term mental wellbeing.

Transition of urban planning to put more stress into human needs and holistic welfare is significant. Especially city planning should strive for such an urban environment which supports human prosperity by composing such elements which provide refreshment and new meanings for a human based on latest research results. Taking care of the fluent flow of life including transportation for various purposes, the minimization of need for transport by providing enough local services and virtual communication possibilities enable the city to emerge as a sustainable form of environment where also the quality of life in addition to standard of living is at good level.

When keeping in mind the important balance of the sustainability triangle, the economic, the ecological and the social point of views, it is possible to implement usable and meaningful city interfaces to their real users at the same time taking care of overall significant issues, climate change and equality across nations as the most important ones, to support the continuation of the mankind. So far human aspect has been neglected besides economic and increasingly ecological issues but as long as urban planning starts to follow the ideas of Christopher Alexander and his numerous successors the situation will improve. While keeping in mind that a city does not just exist but it happens let us borrow the words of Professor Nijkamp: “ The future of city looks bright.”

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